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09/26/2006

Bjoern Haase

3795

6104

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7590

01/06/2009

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EXAMINER

WHITTINGTON, KENNETH

ART UNIT

PAPER NUMBER

2862

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/594,285	Applicant(s) HAASE, BJOERN	
	Examiner KENNETH J. WHITTINGTON	Art Unit 2862	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 November 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,4,6-11 and 15-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,4,6-11 and 15-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 September 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

The Amendment and remarks therewith filed November 21, 2008 have been entered and considered. In view thereof, the objections to the drawings, the objections to the claims and the new matter objections to the specification are withdrawn.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1 and 6-11 are rejected under 35 U.S.C. 102(e) as being anticipated by Harvey et al. (US7202768), hereinafter Harvey.

Regarding claim 1, Harvey discloses a device with only one transmit coil (See Harvey FIGS. 1-4, item 14) and one receive turn system with at least one receive coil (See FIGS. 1-4, items 32A-32C), which are inductively coupled to one another (See FIG. 4, note arrangement shown),

wherein electrical switching means are provided, which make it possible to vary the number of turns of the receive turn system, wherein the number of turns of the at least one receive coil is variable by connecting or disconnecting electrical conductor

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modules, and wherein connected electrical conductor modules are coupled inductively with the transmit coil (See FIG. 4, note switches 34A-34C are selectively switched to activate certain receive coils 32, i.e., vary the number of turns of receive coils, to inductively couple to transmitter 14).

Regarding claim 6, Harvey discloses the switching means are realized using semiconductor components (See FIG. 4, note items 34A-34C and disclosure related thereto).

Regarding claim 7, Harvey discloses at least two receive coils are located coaxially relative to each other (See FIG. 4, note orientation of receiver coils 32).

Regarding claim 8, Harvey discloses at least two receive coils are located in a plane (See FIG. 4, note receiver coils 32).

Regarding claim 9, Harvey discloses at least two receive coils are designed as printed circuit coils, particularly on a printed circuit board (See col. 6, lines 11-32).

Regarding claim 10, Harvey discloses the switching means are realized using semiconductor switches on the printed circuit board (See col. 6, lines 32-48).

Regarding claim 11, Harvey discloses at least one transmit coil is located in a plane which is positioned with a height offset and is parallel to at least one receive coil (See FIGS. 4-6, note structure shown for transmitter and receivers).

Claims 1, 3 and 15-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Kooy et al. (US4775766), hereinafter Kooy.

Regarding claim 1, Kooy discloses a device with only one transmit coil (See FIG. 8, item 6') and one receive turn system with at least one receive coil (See FIG. 8, item 8'), which are inductively coupled to one another (See FIG. 8, note arrangement shown),

wherein electrical switching means are provided, which make it possible to vary the number of turns of the receive turn system, wherein the number of turns of the at least one receive coil is variable by connecting or disconnecting electrical conductor modules, and wherein connected electrical conductor modules are coupled inductively with the transmit coil (See FIG. 4, note switching means 2' is selectively switched to activate certain receive coil sections, i.e., vary the number of turns of receive coils, to inductively couple to transmitter 6').

Regarding claim 3, Kooy discloses the switching means are located between turns of a first receive coil and turns of a second receive coil (See FIG. 8, note located of switching means 2').

Regarding claim 15, Kooy discloses a method for operating an inductive compensation sensor, with only one transmit coil and at least one receive turn system (See FIG. 8, note transmitter 6' and receiver coil system 8'), comprising the following steps:

adjusting a voltage U induced in a receive coil by connecting an adjustment turn system to turns of the at least one receive turn system, wherein said adjustment turn system including one or more compensation modules (See FIG. 8, note switch for adjusting the voltage in the receiver coil).

Regarding claim 16, Kooy the step of switching between m different alternative configurations of the electrical contacting for each compensation module (See FIG. 8, note switch for creating different configurations).

Regarding claim 17, Kooy discloses the adjustment turn system is composed of at least n independent compensation modules KM_n , each having $m(n)$ different configurations, in which a voltage change U is induced, with $U = (U(n, m) - U(n, m+1))$, in the receiving branch of the compensation sensor by selectively switching between individual configurations m of a compensation module KM_n (See FIG. 8, note n compensation modules and switch provides m configurations among the n modules).

Regarding claim 18, Kooy discloses the compensation modules KM_n are configured such that the voltage change $AU_{n,r}$ differs from the voltage difference $AU_{n-1,m}$, with $AU_{n-1,m} = (U(n-1, m) - U(n-1, m+1))$, of compensation module KM_{n-1} by the factor $M(n-1)$, with an ordinal number n reduced by one (See FIG. 8, note by moving the switch, additional modules are added to the receive coil system to increase the induction by a factor related to the number of turns and area of a turn thereof. Note this is simply a property of the system shown).

Regarding claim 19, Kooy discloses binary coding with $M(n)=2$ is used for the compensation modules KM_n of the adjustment turn system, so that the relationship $U = (U(n,1) - U(n,2)) = 2*(U(n-1,1) - U(n-1,2))$ applies (See FIG. 8, note this is simply a property of the apparatus shown).

Claims 1 and 4 are rejected under 35 U.S.C. 102(e) as being anticipated by Nelson (US7176691).

Regarding claim 1, Nelson discloses a device with only one transmit coil (See Nelson FIG. 1, note transmitter) and one receive turn system with at least one receive coil (See FIG. 1, note receiver system and see also receiver system shown in FIG. 7), which are inductively coupled to one another (See FIGS. 1 and 8, note arrangement shown wherein the transmitter is inductively coupled to the receiver system, which is the reason for the switching means shown in FIG. 7),

wherein electrical switching means are provided, which make it possible to vary the number of turns of the receive turn system, wherein the number of turns of the at least one receive coil is variable by connecting or disconnecting electrical conductor modules, and wherein connected electrical conductor modules are coupled inductively with the transmit coil (See FIG. 7, note switching means 52 is selectively switched to activate certain receive coil sections, i.e., vary the number of turns of receive coils, each of which is inductively coupled to the transmitter during transmission pulses).

Regarding claim 4, Nelson discloses the electrical switching means comprises jumpers with switching means located between receive coil turns with a different radius (See FIG. 7, note switches are between coil loops of different diameters, i.e., switch is between an inner coil loop and an outer loop of an adjacent coil).

Response to Arguments

Applicant's arguments filed November 21, 2008 have been fully considered and they are persuasive in part in view of the amendments to the claims. Therefore, the rejections applying Greenwood et al. (GB117507) have been withdrawn. However, in view of the substantive amendments to the claims, i.e., the inclusion of "only" one transmit coil, which is new to the claims, further search and consideration was required and necessitated the following new and/or amended rejections outlined above and discussed below.

Regarding the remaining rejections, Applicants have only addressed the rejection of claim 1 and assert that neither Harvey nor Nelson disclose the use of "only one transmit coil" and that the "electrical conductor modules are coupled inductively with the transmit coil". However, as outlined above in the rejections, both of these references discloses precisely these features and in the manner as recited in the claim.

Regarding Nelson, as shown in FIGS. 1 and 7, only one transmit coil is shown and used in the apparatus. Furthermore, the transmit coil directly couples to each of the receiver modules shown in FIG. 7 during the transmission pulse. This is the reason for the switches between the modules, i.e., to prevent current/voltage from this direct inductive coupling from providing signals in the processing circuit.

Regarding Harvey, as shown in FIG. 4, only one transmitter 14 is shown and used in the apparatus. Furthermore, the transmitter directly inductively couples to the receiver modules via the arrangement. The switches are used to selectively allow eddy current in the coils to respond to this direct coupling.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **KENNETH J. WHITTINGTON** whose telephone number is (571)272-2264. The examiner can normally be reached on Monday-Friday, 8:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Assouad can be reached on (571) 272-2210. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Kenneth J Whittington/
Primary Examiner, Art Unit 2862

kjw